

Interactive Learning Multimedia Containing Balinese Traditional Games in Thematic Learning

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Abstrak

Minimnya ketersediaan multimedia pembelajaran interaktif berbasis aplikasi Android yang mengandung kearifan lokal yang dapat digunakan dalam pembelajaran menyebabkan pemanfaatan media pembelajaran berbasis teknologi menjadi kurang optimal. Penelitian ini bertujuan untuk menghasilkan Multimedia Pembelajaran Interaktif Berisi Kearifan Lokal Permainan Tradisional Bali dalam Pembelajaran Tematik Kelas V Sekolah Dasar. Penelitian ini menggunakan model pengembangan ADDIE. Subyek penelitian adalah dosen ahli media pembelajaran dan ahli isi pembelajaran tematik SD, praktisi (guru), dan siswa kelas V SD. Instrumen penelitian berupa angket dan tes. Analisis data menggunakan analisis deskriptif kuantitatif dan statistik inferensial. Hasil penelitian adalah Multimedia Pembelajaran Interaktif Berisi Kearifan Lokal Permainan Tradisional Bali pada Pembelajaran Tematik Kelas V SD, dengan validitas 95,79% dari ahli media pembelajaran dan 93,85% dari ahli konten pembelajaran tematik SD. Tingkat kepraktisan adalah 97,33% praktisi dan 98,33% mahasiswa. Hasil uji efektivitas dengan uji t sampel korelasi menunjukkan nilai rata-rata pre-test 11,52 dan rata-rata skor post-test 15,89. Disimpulkan bahwa Multimedia Pembelajaran Interaktif Kearifan Lokal pada Permainan Tradisional Bali efektif meningkatkan hasil belajar tematik siswa. Multimedia pembelajaran interaktif membuat pembelajaran menjadi lebih menarik dan berdampak pada hasil belajar siswa yang lebih baik.

Kata kunci: Multimedia Pembelajaran, Permainan Tradisional Bali, Pembelajaran Tematik

Abstract

The lack of availability of interactive learning multimedia based on Android applications containing local wisdom that can be used in learning causes the use of technology-based learning media to be less than optimal. This study aims to produce Interactive Learning Multimedia Containing Local Wisdom Balinese Traditional Games in Thematic Learning for Grade V Elementary School. This study uses the ADDIE development model. The research subjects are lecturers who are experts in learning media and content experts for elementary thematic learning, practitioners (teachers), and fifth-grade elementary school students. The research instruments were in the form of questionnaires and tests. Data analysis used quantitative descriptive analysis and inferential statistics. The research results are Interactive Learning Multimedia Loaded with Local Wisdom of Balinese Traditional Games in the Thematic Learning for Grade V Elementary School, with a validity of 95.79% from learning media experts and 93.85% from elementary thematic learning content experts. The level of practicality is 97.33% of practitioners and 98.33% of students. The effectiveness test results with the correlated sample t-test showed an average pre-test score of 11.52 and an average post-test score of 15.89. It was concluded that the Interactive Learning Multimedia with Local Wisdom in Traditional Balinese Games effectively improved students' thematic learning outcomes. Interactive learning multimedia makes learning more interesting and has an impact on better student learning outcomes.

Keywords: Multimedia Learning, Traditional Balinese Game, Thematic Learning

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1. INTRODUCTION

Teachers are an important part of the success of the learning process. They are expected to maximize their resources' utilization, especially in mastering technology (Gabriela, 2021; Kurniawati & Nita, 2018). Regulation of the Minister of National Education Number 16 of 2007 concerning Standards of Academic Qualification and Teacher Competence states that teachers must use and utilize information and communication technology for learning purposes (Hibana & Surahman, 2021; Laksmi et al., 2019). Technology is now starting to be used in education because people believe that technology can improve the quality of human resources (Abroto et al., 2021; Susanty, 2020). The rapid development of technology has given rise to equipment and applications that are very easy to

learn and use as learning media (Mulyani & Haliza, 2021; Seruni et al., 2019). With more extensive technological advances, teachers must develop various kinds of learning media (Firmadani, 2020; Siti Kudusyah & Harmanto, 2017). Utilization of technology as a medium in learning can arouse the desire of new enthusiasts, increase motivation and stimulation of learning activities, and even have a psychological effect on students (Hidayat & Syafe'i, 2018; L. D. Putra & Ishartiwi., 2015).

The problem that is often encountered in the field today is that not many teachers can optimize existing technology to realize learning that involves technology-based learning media (Sadikin & Hamidah, 2020; Wulandari et al., 2019). So, technology-based learning media is only limited to transferring paper media to digital media with a similar appearance and relatively minimal interactivity. It causes the learning process to be less attractive, so the learning objectives cannot be achieved optimally (Dwiqi et al., 2020; Hidayat & Syafe'i, 2018). Based on observations made in two schools in Gugus 1, Kecamatan Rendang, SD Negeri 1 Pesaban, and 2 Pesaban, fifth-grade teachers at these schools have used technology as a medium in the thematic learning process. However, using technology as a learning medium is still considered less than optimal because it is limited to showing learning videos and less interactive, only inviting students to look for learning materials and resources. The lack of teacher mastery in making interactive learning multimedia results in the lack of availability of interactive learning multimedia that teachers and students can utilize (Geni et al., 2020; Hest et al., 2021).

Based on this, it is felt necessary to develop technology-based learning media that can attract students' attention to learning and create a pleasant learning atmosphere to improve student learning outcomes (Kuswanto & Radiansah, 2018; Prabawa & Restami, 2020) and provide interaction between students and the learning media itself in the form of interactive multimedia learning. Multimedia combines several media types, such as images, text, animation, video, and sound, used to display information (Ivers & Barron., 2002; Ningrum et al., 2021). Learning multimedia is often referred to as multimedia which is used to support the learning process (Dwiqi et al., 2020; Sudatha, I. W.; Tegeh, 2015) and to help students understand learning materials to achieve certain learning objectives (Bardi & Jailani, 2015; Widyatmojo & Muhtadi, 2017). Interactive multimedia uses various media types (text, sound, graphics, animation, and video) to convey messages or information, adding interactive components (Hartiyani & Ghufron, 2020; Munir, 2012; Norhayati et al., 2018). The interactive aspect of multimedia can be in the form of navigation, simulation, games, and exercises. It can also be in the form of feedback.

In interactive multimedia learning, learning materials are presented through static visualization and dynamic visualization (animation) to avoid excessive verbalization in the learning process (Chan et al., 2017; Maria et al., 2018). With an integrated combination of several media such as text, images, audio, video, and animation, interactive learning multimedia is suitable for clarifying abstract concepts to become more concrete (Diyana, N et al., 2019; Werdiningsih et al., 2019). Multimedia interactive learning by utilizing an android application-based smartphone is an innovation in learning (Buchori, 2019; Karim & Savitri, 2020; Siti Kudusyah & Harmanto, 2017). Currently, smartphones with the Android operating system are the choice as a learning revolution that allows and becomes a strong foundation in education. Many learning resources and learning media based on Android applications are being developed. The characteristics of a smartphone that are small and easy to carry allow users to access it anytime and anywhere. With this Android-based interactive learning multimedia innovation, it is expected to provide changes in the learning atmosphere that is easier and more enjoyable, to improve student learning outcomes.

Good android-based interactive learning multimedia can not only be used to facilitate the delivery of learning materials and attract students' interest in learning. It will be even

better if it can be integrated or contains local wisdom in the area. Internalizing the values of local wisdom into learning materials through multimedia is expected to make students more critical and feel proud of local culture (Hest et al., 2021; Novitasari, 2016; Prayogi et al., 2019). Traditional Balinese games are a form of cultural output that has become a medium of learning for children, especially in Bali (Adini & Lestarinigrum, 2018; Taro, 2010). One of the benefits of traditional Balinese games is a social function, where through traditional Balinese games, the experience of interacting and communicating (cooperating) with playmates is obtained (Astakoni et al., 2022; Effendi & Hartati, 2018).

Several previous studies have stated that multimedia can improve students' understanding of learning (Hotimah & Muhtadi, 2018). Another study revealed that interactive multimedia effectively improved students' thematic learning outcomes after being tested on students, making it feasible to be used in the learning process (Dwiqi et al., 2020). Subsequent research showed that the internalization of local wisdom in interactive multimedia learning received a positive response, with a percentage reaching 94% very interesting and 94.28% very practical, and there was an increase in student learning outcomes after using interactive multimedia based on local wisdom in the learning process (Prayogi et al., 2019). Based on this, this research aims to produce Interactive Learning Multimedia Containing the Local Wisdom of Balinese Traditional Games in Fifth Grade Thematic Learning that is valid, practical, and effective in improving students' thematic learning outcomes.

2. METHODS

This study uses the ADDIE development research model. This model is divided into five steps, namely: analysis (analyze), design (design), development (development), implementation (implementation), and evaluation (evaluation). The research subjects in this study consisted of two learning media experts (lecturers), two elementary thematic learning content experts (lecturers), two teachers (practitioners) in Cluster 1 of Rendang District, and elementary school students in Cluster 1 of Rendang District. The data collection method used in this development research is the questionnaire/questionnaire method and the test method. The data collection instruments in this study were questionnaires/questionnaires for validity and practicality tests and multiple-choice tests. The questionnaire/questionnaire sheet is used to measure the validity and practicality of the product developed from the results of the learning media expert test, the content expert for elementary thematic learning, individual trials, and small groups. At the same time, the multiple-choice test is used to measure the effectiveness of the developed product. The data analysis used quantitative descriptive and inferential statistical techniques in this development research. The quantitative descriptive analysis technique was used to process research data obtained through a questionnaire in the form of a descriptive percentage, namely the validity and practicality of the product developed. The provisions or references give meaning to decision-making, as shown in Table 1 and Table 2.

Table 1. Achievement Level Conversion with a Five Validity Scale

Achievement level	Qualification	Description
90% -100%	Very Valid	Worth using without revision
75% - 89%	Valid	Worth using with revisions as necessary
65% - 74%	Enough	Worth using with many revisions
55% - 64%	Not enough	Not yet feasible to use, and there are still many revisions.
0 % - 54%	Bad	Not suitable for use and must be revised completely.

Table 2. Achievement Level Conversion on a Practicality Five Scale

Achievement level	Qualification
90% - 100%	Very Practical and Interesting
75% - 89%	Practical and Attractive
65% - 74%	Quite Practical and Interesting
55% - 64%	Less Practical and Interesting
0 % - 54%	Very Impractical and Interesting

Inferential statistical analysis was used to determine the level of effectiveness of the development product on student learning outcomes before and after using the development product. The level of effectiveness is known through the pre-test and post-test results. The pre-test and post-test results were then analyzed using the correlated sample t-test. Previously, the t-test of correlated samples was carried out to test the prerequisites for normality and homogeneity.

3. RESULTS AND DISCUSSION

Results

The design is made using Articulate Storyline 3, where the published results of Articulate Storyline 3 are in the form of web-based media (html5) and then packaged into applications (apk.) using the Website 2 APK Builder software so that the final result of interactive multimedia learning design is an application (app.) that can install on android smartphone. The interactive learning multimedia design packaged into an android application file is saved with the file name "Interactive Learning Multimedia_2_1.0.apk" with a size of 40MB. The learning multimedia design that has been developed is then tested to determine its validity and practicality. The results of product trials by learning media experts, elementary thematic learning content/content experts, individual trials by practitioners, and small group trials by students are presented in detail in [Table 3](#).

Table 3. Product Validity and Practicality Test Results

No	Trial Subject	Result	Description
1	Learning Media Expert Test	95.79%	Very Valid and worth using
2	Elementary School Thematic Learning Content Expert Test	93.85%	Very Valid and worth using
3	Individual Trials by Practitioners	97.33%	Very Practical and Interesting
4	Small Group Trial by Students	98.33%	Very Practical and Interesting

[Table 3](#) shows the results of the interactive learning multimedia design trial containing local wisdom of traditional Balinese games in the fifth-grade thematic learning of the elementary school. It is known that the validation results show that the interactive learning multimedia design is valid, practical, and feasible to use. Furthermore, interactive multimedia was implemented to test its effectiveness on the thematic learning outcomes of fifth-grade elementary school students. The effectiveness test was conducted using a multiple choice method on 27 fifth-grade students of SD Negeri 1 Pesaban through pre-test and post-test. The pre-test and post-test results were then analyzed using a correlated sample t-test to determine the difference between before and after using interactive multimedia learning. Before the t-test of correlated samples was carried out, a prerequisite analysis test was carried out, namely normality and homogeneity. Based on the normality test, homogeneity, and correlated sample t-test, the results are shown in [Table 4](#).

Table 4. Normality Test Results

Learning outcomes	Statistic	df	Significance
<i>Pre-test</i>	0.120	27	0.200
<i>Post-test</i>	0.136	27	0.200

Based on [Table 4](#), it was found that the group of student learning outcomes data before and after the use of interactive learning multimedia was normally distributed. Then proceed with the results of the homogeneity test shown in [Table 5](#).

Table 5. Homogeneity Test Results

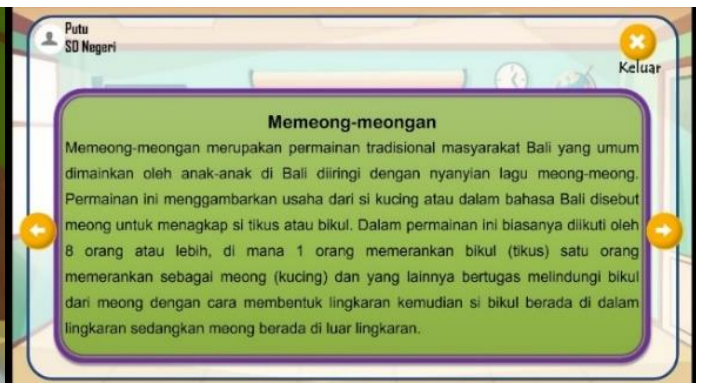
	Levene stats	df1	df2	Significance
Learning outcomes	0.284	1	52	0.596

Based on [Table 5](#), it is shown that the data on student learning outcomes before and after the use of interactive multimedia learning has a homogeneous variant. The results of the T-Test are shown in [Table 6](#).

Table 6. T-Test Results

Learning outcomes	Average	t	df	Significance
<i>Pos-Tes</i>	15.89	19.220	26	0.000
<i>Pre-Tes</i>	11.52			

[Table 6](#) shows significant differences in student learning outcomes before and after using Interactive Learning Multimedia with Local Wisdom in Traditional Balinese Games in the Thematic Learning for fifth-grade elementary school. So it can be concluded that the Interactive Learning Multimedia Containing Local Wisdom Balinese Traditional Games in Fifth Grade Thematic Learning effectively improves students' thematic learning outcomes. Here are some pictures of the final results of interactive multimedia learning containing local wisdom of traditional Balinese games in fifth-grade thematic learning, as shown in [Figure 1](#) and [Figure 2](#).

**Figure 1.** Login Page**Figure 2.** Material Page

Discussion

This research produces interactive multimedia learning containing local wisdom of traditional Balinese games in the thematic learning of the fifth-grade elementary school. Based on the results of the product validity test that has been carried out, interactive learning multimedia containing local wisdom of traditional Balinese games were declared valid, practical, effective, and suitable to be used to assist students in learning thematic learning in fifth-grade elementary school. Multimedia is made for a specific purpose depending on its use. Mentioning the multimedia used to make it easier for students to understand the learning material to achieve certain learning objectives is called learning multimedia (P. Putra, 2018; Surjono, 2017). Multimedia learning is one digital-based innovative media that can facilitate learning (Hibana & Surahman, 2021; Sukmanasa et al., 2017). This interactive learning multimedia containing local wisdom of traditional Balinese games were developed using Articulate Storyline 3 software, with the final result in the form of an application (app.) that can be installed on a smartphone. This interactive learning multimedia packaging as an application (app.) aims to give students a better learning experience using technology-based learning media by utilizing smartphones. Developing learning media that utilize smartphones can increase students' interest in learning (Huberty et al., 2019; Karim & Savitri, 2020).

The content and content of the material in this interactive learning multimedia were developed based on basic competencies and indicators that have been determined based on material analysis on Theme 8 Environment of Our Friends, Sub-theme 1 Humans and the Environment, which is integrated with the content of local wisdom of traditional Balinese games, namely Mememong-meongan and Juru Pencar. Integrating the values of local wisdom content into learning materials by multimedia is expected to make students more critical and feel proud of local culture (Chairiyah., 2017; Prayogi et al., 2019). Using local cultural content (local wisdom) of the Balinese people will make it easier for students to understand the material (Riwu et al., 2018; Saidah & Damariswara, 2019). Traditional Balinese games in interactive multimedia learning are presented in videos and learning materials. (Nugraha et al., 2019; Rizky & Purnomo, 2021; Saputra & Ekawati, 2017) Explained the benefits of using video media in learning, namely making the message more attractive, where there will be stimulation and motivation for student learning with attention.

Qualifications that are very valid and feasible to use can be achieved due to the suitability of using interactive learning multimedia elements such as text, images, audio, and animation in delivering learning messages, as well as interactivity and packaging that is done well. Submission of learning material using multimedia with elements such as text, images, sound, video, and animation following effective material to clarify the material presented (Pratiwi & Ismaniati, 2017; Saputri et al., 2018). These elements make it easier for students to understand the material presented in learning multimedia (Buchori, 2019; Inceday, 2018). Audio and animation presented in multimedia can help students understand learning material quickly so that it has an impact on increasing student knowledge (Bardi & Jailani, 2015; Widyatmojo & Muhtadi, 2017). In interactive learning, multimedia must have good interactivity or accessibility to allow users to interact actively with the program (Kurniawan et al., 2018; Sulistyan et al., 2022). Interactivity assumes that students can learn better when they can control their learning. Therefore, interactive learning multimedia must allow students to control the multimedia itself (Diyana, N et al., 2019; Sudarma, I Komang, 2015).

It is in line with previous research, which states that interactive multimedia learning containing local wisdom of traditional Balinese games in fifth-grade thematic learning in elementary school significantly improves the outcomes of fifth-grade elementary school students (Afnan & Lasmawan, I W. Margunayasa, 2022). It is also supported by previous research, which found that the increase in learning outcomes was due to the use of interactive multimedia learning by utilizing smartphones in the learning process, making students more

interested and excited to learn (Khairini & Yogica, 2021; Nasution & Siregar, 2019). Interactive learning multimedia equipped with various elements, practice questions, tutorials, and simulations can make it easier for students to understand learning materials and increase their understanding of concepts (Afnan & Lasmawan, I W. Margunayasa, 2022; Purnama et al., 2017). The use of interactive learning multimedia oriented to local wisdom is also significantly effective in improving student learning outcomes (Nugraha et al., 2019). Based on the results of research and discussion supported by previous studies, interactive multimedia learning containing local wisdom of traditional Balinese games produced is very suitable for use in the learning process. It can improve the thematic learning outcomes of fifth-grade elementary school students.

This development research implies that students can use this media to help make it easier to understand the material while playing and introducing Balinese culture. In addition, the implications of interactive learning multimedia can be utilized using smartphones, making learning more interesting, fun, and meaningful and impacting better student learning outcomes. With this research, it is hoped that it will become one of the options in helping implement the learning process in schools. This research is far from perfect because this research is still limited to developing interactive multimedia containing traditional Balinese games in thematic learning using smartphones. It is hoped that further research will be able to deepen the scope of research and be developed through laptops, not only through smartphones.

4. CONCLUSION

Based on the results of the research that has been carried out, it can be concluded that the Interactive Learning Multimedia Containing Local Wisdom Balinese Traditional Games in the Thematic Learning of fifth-grade elementary school is very valid, practical, and effective in improving thematic learning outcomes of fifth-grade elementary school students. With the production of interactive learning multimedia containing local wisdom, traditional Balinese games that can be used using smartphones make learning more interesting, fun, and meaningful, impacting better student learning outcomes

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